NORTH PACIFIC OCEAN

By WILLIS E. HURD

Atmospheric pressure.—While in June, 1931, the Aleutian LOW was better developed than normal for the month, in July, on the average, the depression had largely filled, with barometer higher than normal, except over the northwestern part of the Gulf of Alaska, where it was slightly below. Such shallow northern depressions as occurred extended from near Kodiak northward across Alaska into the Arctic Ocean, the average barometer at Point Barrow being 29.84 inches.

The North Pacific HIGH on the average covered a wide expanse of the ocean, with a greatest north-south extent from the central Bering Sea to the Hawaiian Islands, and a greatest northeast-southwest extent from eastern Alaska almost to the lower islands of Japan.

The following table gives barometric data for several island and coast stations in west longitudes, including Point Barrow on the Arctic Ocean:

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean and adjacent waters, July, 1931, at selected stations*

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow [1]	29.84	−0.08	30.26	1st	29.44	30th.
Dutch Harbor [1]	30.02	+0.08	30.30	4th	29.64	26th.
St. Paul [1 2]	30.00	+0.16	30.30	1st	29.66	24th.
Kodiak [1]	29.92	−0.02	30.20	4th [3]	29.42	17th.
Midway Island [1]	29.99	−0.12	30.10	11th [3]	29.80	7th.[3]
Honolulu [4]	30.01	−0.01	30.09	2d	[3] 29.90	31st.
Juneau [4]	30.05	0.00	30.43	5th	29.52	20th.
Tatoosh Island [4 5]	30.04	−0.04	30.45	3d	29.69	20th.
San Francisco [4 5]	29.84	−0.11	30.02	8th	29.67	24th.
San Diego [4 5]	29.81	−0.11	29.93	9th	29.69	24th.

[1] P. m. observations in averages; a. m. and p. m. in extremes.
[2] For 30 days.
[3] And on other date or dates.
[4] A. m. and p. m. observations.
[5] Corrected to 24-hour mean.

Cyclones and gales.—The month of July passed without the appearance of any important cyclones on our charts over any part of the North Pacific Ocean. Aside from one or two Aleutian disturbances of moderate depth, the deepest depression occurring in middle and upper latitudes passed over northern Japan on the 26th. No high winds, however, so far as known, occurred in its vicinity. Scattered gales, in no instance exceeding force 8, were reported on a few days from the 2d to the 11th along the upper routes. A fresh gale was experienced south of Honshu on the 9th, while off the upper California coast and thence for approximately 500 miles southwestward, gales of similar force were encountered on the 2d and 3d. In the last instance the cause was a sharp pressure gradient on the eastern slope of the oceanic HIGH abutting upon a LOW over southern California.

Conditions were quiet in the Asiatic Tropics, with only slight depressions occurring. Off the Mexican west coast the weather was considerably disturbed, with indications that at least four tropical depressions or cyclones of sufficient energy to cause known gales of force 8 or 9 were developed. Observations were too limited, however, to give more than meager information as to storm formation and movement. The only disturbance among them mentioned by the Mexican weather maps was that of the 21st to 24th or 25th, with some violence of wind and precipitation indicated, as the cyclone progressed northwestward and entered the coast through the Gulf of California. The gale notations, some of which appear in the table of gales, as gathered from our vessel weather reports, show the following: On the 3d, south of Acapulco, occurred the highest wind thus far reported for the entire ocean for the mouth—an east gale of force 9, accompanied by a barometer depressed to 29.55 inches. On the 10th, at the western extremity of the Gulf of Tehuantepec, a fresh north gale occurred, with pressure down to 29.66 inches. On the 21st a fresh southeast gale was reported south of Manzanillo, with but slight barometric depression. On the 23d, in 16° 55′ N., 101° 35′ W., a moderate southeast gale was experienced, with lowest pressure 29.59 inches. At 9 p. m. of the 25th the American steamship *Ensley City* reported a barometer reading of 29.39, and an hour later a maximum wind force of 7 from the southwest in 13° 20′ N., 96° 08′ W. On the 26th, between Acapulco and Salina Cruz, fresh gales from east-southeast and north-northeast occurred, with lowest reported barometer, 29.63 inches. In a report from the American steamship *La Perla*, the observer, Mr. J. Walton, said: "July 21 and 22: Unsettled weather conditions along the Mexican coast. The Weather Bureau at Mexico advised that a hurricane was moving along the coast."

Winds at Honolulu.—The prevailing wind direction at Honolulu was east, with a maximum velocity of 24 miles from the northeast on the 21st.

Fog.—Over practically the entire region lying between the fortieth and fiftieth parallels fog showed a slight to heavy increase over that of June, the percentage of its occurrence rising gradually from the American coast westward toward the Kuril Islands. Over most of the western half of the ocean within these latitudes at least 40 to 60 per cent of the days had fog. Fog lessened rapidly south of the fortieth parallel, disappearing mainly at 35° N., except along the American coast. From Eureka southward to the middle coast of Lower California it occurred on 25 to 30 per cent of the days.

BUCKET OBSERVATIONS OF SEA-SURFACE TEMPERATURES

By GILES SLOCUM

STRAITS OF FLORIDA AND CARIBBEAN SEA

The temperatures herein published are the means of the average temperatures for the four quarters of the month, except that, in the case of the 5° subdivisions of the Caribbean Sea, the figures shown are the simple means of the observed temperatures with the entire month taken as a unit. Table 1 shows the lengths of the quarters for each length of month.

Table 2 shows the average temperature for the Caribbean Sea and the Straits of Florida for July of each year from 1919 to 1930, inclusive, and Table 3 summarizes the temperature for the month in the same areas, including the departures of the July, 1930, means from the 11-year means for July, 1920–1930, and the changes from the temperatures for the preceding month of June, 1930.

The chart shows the number of observations taken during the month of July, 1930, within each 1° square; the mean temperature of the Straits of Florida, and of each 5° [1] subdivision of the Caribbean Sea; the 11-year means (1920–1930) for these areas; and the local mean time corresponding to Greenwich mean noon, at which time the mariners are instructed to make the temperature readings.

[1] In three cases, as indicated on the chart, the observations from small, little traveled, and unimportant areas at the outer limits of the Caribbean Sea have been treated as parts of contiguous 5° subdivisions.